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Educational success and adolescents' well-being in Switzerland

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Abstract: Adolescents' well-being is an important indicator of their successful development. Educational success is a likely but little investigated source for well-being. This paper will examine whether different components of educational success in the transition from lower-secondary to post-obligatory education affect young people's well-being in late adolescence. Based on the Swiss Survey of Children and Youth COCON, including a birth cohort of adolescents who were between 15 and 18 years old at the time points of data collection (2006-2009; N = 952), results of structural equation and multiple linear regression models show that educational success does indeed affect well-being at the age of 18.

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Educational Success and Adolescents' Well-Being in Switzerland

Irene Kriesi* and Marlis Buchmann** with the collaboration of
Andrea Jaberg***

1 Introduction

The quest for well-being is one of the most important goals of all human activity (Ormel et al. 1999). For adolescents, the degree of well-being is an important indicator of successful development. Previous research has explained differences in young people's well-being by highlighting the importance of personality traits, gender and socio-emotional aspects of the family background. Only a few studies, conducted in countries such as Finland, the USA or Switzerland, have addressed the relevance of educational success, showing that various components of educational achievement have an impact on young adults' well-being. These include academic achievement in compulsory schooling and the type of upper-secondary school track (Salmela-Aro and Tynkkynen 2010); the expected transition to upper-secondary schooling (Neuenschwander 2007), successful intergenerational transmission of educational status (Samuel et al. 2011), and educational goal achievement (Schulenberg et al. 2004; Messersmith and Schulenberg 2010). It is noteworthy that these studies focus on one or, at most, two indicators of educational success. The relative significance of different components of educational achievement thus remains unclear. It is also likely that the relationship between components of educational success and well-being depends on the educational system and thus varies between countries. Our paper will therefore examine for Switzerland how different components of educational success in the transition to post-obligatory education affect young people's well-being in late adolescence. We are particularly interested in the relative impact of educational success vis-à-vis well-researched determinants of well-being, such as personality, socio-emotional circumstances and gender.

The analyses are based on the *Swiss Survey of Children and Youth COCON*. At the time of the first and third data collection (2006; 2009) respondents were 15 and 18 years old respectively. Analyses are based on structural equation and multiple linear regression models.

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2 Theoretical considerations

Our theoretical considerations begin with conceptualising well-being (2.1). We will next identify markers of educational success in the Swiss educational system (2.2). The third section will discuss theoretical approaches for the determinants of individual well-being, forwarding assumptions on how components of educational success, socio-economic and emotional family background, personality and gender may affect well-being (2.3).

2.1 The concept of well-being

The concept of well-being basically taps whether people experience their lives positively (Veenhoven 2008; Diener 2009). Positive experiences are linked to effective personal functioning in relevant life domains and to the fulfilment of essential physical, emotional and social needs. Consequently, research distinguishes between several dimensions of well-being, such as cognitive, psychological, social, economic or physical well-being (Pollard and Lee 2003). During adolescence, the first three dimensions are the most salient ones.¹ We thus conceptualise adolescents' overall well-being as the concurrence of cognitive, psychological and social well-being.

Cognitive well-being includes all intellectual and education-related aspects, capturing positive academic functioning and adjustment to educational settings. This enables individuals to overcome difficulties and inequities in education and in everyday life (Bandura 1989). The psychological dimension taps either the absence of negative mental states, such as anxiety or depression, or the predominance of positive mental states, such as a high level of happiness or self-esteem (Pollard and Lee 2003). Psychological well-being goes along with a sense of self-worth and satisfaction with one's behaviour and personal characteristics (Salmela-Aro and Tuominen-Soini 2010). Social well-being refers to individuals' social relationships with other people, their neighbourhoods and communities (Keyes 1998), providing functional and structural social support. A high level of social support enables individuals to fall back on social networks and positive interpersonal relationships, facilitating personal functioning and coping with life's everyday challenges (Zimet et al. 1988; Keyes 1998). Well-being should thus be highest for adolescents with sound academic functioning, who predominantly experience positive mental states and who have a high level of social support.

¹ Research has shown that the economic dimension plays a limited direct role in highly developed countries (e.g., Easterlin 2006). Physical well-being is of minor concern in childhood and adolescence but becomes more important later in the life course. An exception is the aspect of substance abuse (e.g., Schulenberg et al. 2005).

2.2 Components of educational success

Conceptualising educational success needs to take into account respondents' social origin and the main features of a country's educational system. With respect to the latter, Kerckhoff (2001) regards the degree of stratification and vocational specificity as salient features. They are very pronounced in the Swiss educational system: Children are sorted into different tracks of lower-secondary schools, usually at the age of about 12 or 13 years, in some cantons even at younger ages. These tracks differ as to academic rigorousness and determine access to the upper-secondary school level, which is stratified along the lines of academic education – called “middle schools” in the German speaking part of Switzerland – and vocation-specific training. Academic education differentiates between general and specialized middle schools. The former enable direct access to universities, the latter to universities of applied science. Vocational education is highly differentiated, offering training for more than 200 occupations. It is also the most prevalent type of upper-secondary education. About two thirds of all young people undergo vocational training, which is predominantly firm-based and in the form of apprenticeships (e.g., Hupka-Brunner et al. 2010).

Due to the stratified nature of the lower-secondary level, *status attainment in lower-secondary schools* (i.e., the completed track of lower-secondary education) denotes an early marker of educational success. It determines access to upper-secondary education by serving as a major selection criterion for employers and schools. Entry into the academic track requires the completion of a high-status lower-secondary track. Students from low- and medium-status tracks predominantly serve vocation-specific apprenticeships.

The pronounced vocational specificity of the Swiss educational system and the concomitant tight link to the labour market render two additional markers of educational success relevant: the *successful transition to (and later completion of) post-obligatory upper-secondary education* and *educational goal attainment*. Young people who fail the transition to post-obligatory education, or make the transition but fail to complete it, are particularly disadvantaged. They encounter severely restricted employment opportunities, facing high risks of unemployment and precarious working conditions.

Educational goal attainment presupposes occupational goal setting and later goal achievement (i.e., being able to fulfil one's occupational aspirations). Goal setting starts early. About a year before completing compulsory schooling young people have to decide which occupation they would like to train for and apply for the respective training vacancies. Individual choice and opportunities to change vocational training slots are restricted, however, as candidates for training vacancies are chosen by the employers. Their selection of trainees is based on the applicant's status regarding lower-secondary track, grades and informal qualifications, such as perceived social competencies (e.g., Hupka-Brunner et al. 2010). Adolescents who

fail to find the desired vocational training are forced to compromise their educational goals and apply for a different occupation-specific training position, enrol in a gap year in order to re-apply a year later or enter the labour market without any formal vocational training.

Regarding the question of how educational success and social origin are linked, status attainment theory posits that parents try to ensure that their children reach at least the same social status they themselves have attained. In turn, children generally aspire to maintain the family of origin status. To achieve this, children have to acquire at least the same level of education as their parents (Breen and Goldthorpe 1997). Young people's educational success thus also depends on whether they are able to fulfil parental expectations and attain an educational level equivalent to, or higher than, their parents. We identify *intergenerational status attainment* as a fourth marker of educational success.

Evidently, the four identified components of educational success are interrelated to a certain extent. Young people with low status attainment in lower-secondary education encounter more difficulties in educational goal attainment than their better educated counterparts. They also run higher risks of failing the transition to post-obligatory education altogether (Böni 2003). Both aspects, failed transition to post-obligatory education and failed educational goal attainment, are likely to go along with increased risks of failing intergenerational status attainment. An accumulation of educational failure is also likely to have a cumulative effect on well-being, in the sense that *the more components of educational success a person fails, the more strongly well-being is affected*.

2.3 Determinants of individual well-being

To answer our research questions we will rely on four theoretical approaches to deduce hypotheses: goal theory, resource theory, activity theory and social comparison theory. They highlight different, yet complimentary, determinants of individual well-being.

Goal theory claims that individual well-being depends on the fulfilment of needs and the attainment of previously set goals. Well-being is affected positively if the desired endpoints (i. e., needs and goals) are achieved (Diener 2009). According to *resource theory*, well-being depends on material, social and cognitive *resources*, such as income, education, competencies or social relationships (Ormel et al. 1999). Resources affect well-being directly, but also indirectly by supporting goal achievement. *Activity theory* postulates that well-being is a by-product of human activity and thus of goal striving (Diener 2009; Messersmith and Schulenberg 2010). This perspective claims that well-being benefits not only from successful goal achievement, as goal theory assumes, but also from the active process of goal striving. *Social comparison theory* further develops goal theory by suggesting that individual achievement improves well-being under certain conditions only. The claim is that

well-being depends on the comparison between an individual's life situation and a standard used for judgment. Such standards are based on socially shared notions of life success. Individuals show the tendency to judge themselves through the eyes of others (Veenhoven 2008; Diener 2009). Well-being is positively affected if individuals perceive their life situation regarding socially valued goods and aspects of life as equal or even superior to that of others. Relevant for well-being is thus "the gap between perceptions of life-as-it-is with notions of how-life-should-be" (Veenhoven 2008, 47).

2.4 Educational success and well-being

Turning first to status attainment in lower-secondary education, we refer to resource theory's assumption that well-being depends on individual resources. Education may be conceptualised as an individual resource, affecting well-being in absolute and relative terms (Desjardins 2008; Hadjar et al. 2008). In absolute terms, education fosters competencies and values as well as the accumulation of knowledge beneficial for individual well-being. Along this line of reasoning, young people with high-status achievement in lower-secondary schooling should be better able to cope with stressors and negative life events, known to have a detrimental effect on well-being. The relative mechanism pertains to the positional property of education. Academically more demanding lower-secondary school tracks convey a higher educational status. As a result of social comparison, this may increase young people's self-esteem and academic self-efficacy (Trautwein et al. 2006) and thus their well-being. Accordingly, we hypothesize that *high-status attainment in lower-secondary schooling affects individual well-being in late adolescence positively*.

The second marker of educational success, the transition to post-obligatory education and the subsequent completion of some type of upper-secondary education, has become the social norm in advanced industrial countries. The minority of adolescents who fail this important milestone become socially stigmatised (Solga 2002). The absence of an upper-secondary educational credential also has adverse long-term effects on an individual's later social position and life chances (Gangl 2003). Due to individuals' propensity for social comparison, stigmatisation and the prospective low position in the social hierarchy may impact adolescents' well-being negatively. *A failed transition to post-obligatory education is thus likely to lower individual well-being*.

Educational goals represent ideal states of future educational attainment and serve as reference points for educational decisions. According to goal theory, attaining an educational goal is likely to lead to feelings of success and self-affirmation and thus to higher well-being. Vice versa, goal failure should lead to lower well-being. This basic assumption of goal theory has been refined by Easterlin (2006). Based on social comparison theory, he argues that well-being does not depend on absolute goal attainment but on the degree of goal adaption relative to attainment.

Individuals who reach their goals may either be content with their attainment or subsequently raise their aspirations even higher. Individuals who fail their goals may then adjust them to their factual level of attainment, uphold their goals or abandon them altogether. Well-being is negatively affected if adaption to actual attainment results in a gap between attainment and an individual's goals. This gap represents a discrepancy between how life is and how it should be, thus engendering feelings of disappointment and deprivation. Against this background, we formulate four hypotheses pertaining to the three coping strategies of goal resetting, goal retention and goal abandonment in response to goal failure: (1) *Goal failure will not affect well-being if young people reset their goals and adjust them to their actual educational achievement.* (2) *Well-being will be affected negatively if young people hold on to their initial goals despite the fact that they have not been able to reach them hitherto.* The reason is that, contrary to the first situation, a discrepancy remains between how life is and how it should be. Regarding the coping strategy of goal abandonment, goal theory and action theory suggest different hypotheses. Based on the former, (3) *abandoning all educational goals will not affect well-being* since no discrepancy remains between how life is and how it should be. Action theory assumes, however, that a complete renouncement of goals may lead to detachment, that is, the feeling of having nothing to do with the failure and the associated emotions, which is generally detrimental to well-being (Messersmith and Schulenberg 2010). (4) *Goal abandonment should thus affect well-being negatively.*

Our theoretical reasoning regarding successful or unsuccessful intergenerational status attainment is based on social comparison theory. Departing from empirical findings showing that the majority of young people succeed in maintaining or even exceeding their parents' social status (Shavit and Blossfeld 1993), we may conclude that intergenerational status transmission has become the social norm and is thus likely to serve as a benchmark for social comparison. Due to people's tendency to see and appraise their situation through the eyes of others (Veenhoven 2008), we assume that the *well-being of the minority of young people who do not attain a level of education similar to that of their parents will decrease.*

Finally, we need to acknowledge that individual well-being may have an impact on educational success. High well-being promotes successful coping with school-related challenges, such as managing time resources, meeting high achievement demands or finding a suitable educational track (Salmela-Aro and Tuominen-Soini 2010). As a result, adolescents with high well-being during early and middle adolescence should be more likely to complete high-status tracks of lower-secondary school or enter the aspired type of upper-secondary education. Against this background, *we expect that a high level of well-being during primary and lower-secondary school will positively affect all four components of educational success in the transition to post-obligatory education.*

2.5 Socio-economic and emotional family background, personality and gender

Our interest in the relative impact of educational success compared to family background, personality and gender leads us to briefly elaborate on the potential significance of these characteristics for well-being. Socio-economic background is relevant for well-being because of its resource property. Apart from the family's standard of living, which has a rather small direct impact on well-being in highly developed countries (Easterlin 2006), high SES parents are more successful in promoting their children's agency (Lareau 2003), which in turn improves individual well-being. Due to the superior economic, cultural and social resources of higher-status, their children also stand a better chance of completing a high-status track in lower-secondary schooling, making the transition to post-obligatory education, and reaching their educational goals, thus improving their well-being. *A high socio-economic family background is, therefore, likely to increase individual well-being.*

Psychological perspectives on well-being have highlighted the significance of socio-emotional resources prevalent within the family and resources emanating from personality traits (Diener 2009). The socio-emotional quality of the parent-child relationship is of particular importance even in late adolescence. This relationship, particularly the one with the mother, has been shown to be one of the most important determinants of young people's well-being (Baldwin and Hoffmann 2002; Videon 2005). *We thus hypothesize that a positive relationship with the parents, especially with the mother, increases young people's well-being at the age of 18.*

The personality traits extroversion and neuroticism have been related to well-being in previous research (Lucas and Diener 2009). Psychological temperament theories argue that extroverted individuals are more receptive to positive experiences, neurotics more to negative ones. Positive experiences lead to positive feelings, negative experiences to negative feelings, both of which affect well-being accordingly. Alternative instrumental theories stress an indirect link. They claim that extroversion and neuroticism have an impact on well-being through the choice of situations which bring about positive or negative feelings (Lucas and Diener 2009). *We expect highly extroverted and/or emotionally stable adolescents to have higher well-being than more introverted or neurotic ones.*

Last but not least, we anticipate gender differences in well-being during late adolescence due to gendered socialization processes. Previous research has shown that young women have lower body satisfaction than men (Salmela-Aro and Tynkkynen 2010) and this is likely to affect girls' well-being negatively. Teachers and tutors base their feedback for girls on their competence, for boys on their motivation (Baldwin and Hoffmann 2002). This may explain girls' more dysfunctional competence beliefs and performance attributions, which is likely to result in lower well-being. Furthermore, girls' well-being may be negatively affected by their lower resilience to failures in social relationships common during adolescence (Baldwin and Hoffmann 2002). *We expect girls to have lower well-being than boys.*

3 Data and Methods

The analyses are based on the first and third data waves of the *Swiss Survey of Children and Youth COCON* (Buchmann and Fend 2004). COCON includes a representative sample of adolescents born between September 1, 1990 and April 30, 1991, residing in the German- and French-speaking parts of Switzerland ($N = 854$ for the third wave; 53.1% women and 46.9% men).² The adolescents were 15 years old at the time of data collection in 2006 and 18 when data was collected again in 2009 (CAPI and written questionnaires).³ Besides the adolescents their primary care givers and their class teachers were surveyed. The data include detailed information on the adolescents' social situation and biography, the family context, their competences and personality characteristics.

We employed a structural equation model to estimate the effects of interest. Its evaluation is based on several widely used goodness-of-fit measures (e. g., Byrne 2001).⁴ The root mean square error of approximation (RMSEA) measures the discrepancy per degree of freedom. By convention, values $\leq .06$ indicate a good fit, those between .06 and .08 an acceptable model fit. The comparative fit index (CFI) and the adjusted goodness-of-fit index (AGFI) have values between 0 and 1. Values close to 1 indicate a very good fit. CMIN indicates the discrepancy between the restricted and the unrestricted covariance matrix. A high probability associated with CMIN indicates a close fit of the hypothesized model. However, as the values of CMIN are very sensitive to sample size and lacking normal distributions, they should be treated with care.

To include all possible dimensions of educational goal attainment (see below) and interaction terms in the same model, we additionally estimated two multiple linear regression models (OLS). We follow Winship and Radbill (1994) in estimating both multivariate models with unweighted data. Sample weights are applied to descriptive analysis only.⁵

2 For the first three waves, panel mortality was 24%. Descriptive analyses (not shown) demonstrate that panel mortality is unrelated to well-being at age 15 but related to lower-secondary educational attainment. Adolescents from academically less demanding school tracks are slightly overrepresented in the group of dropouts. In the descriptive analyses, this slight bias was corrected with a sampling weight, correcting also for over-sampling of particular community types and Swiss nationals (Sacchi 2006) (see also footnote 5).

3 The samples were drawn by a two-stage method whereby 131 communities were selected first. Cohort members were then randomly sampled from the official register of community residents.

4 To correct for non-normality in our data, we used the bias-corrected percentile method to estimate robust standard errors and the Bollen-Stine p-value to assess the overall model fit.

5 When using survey data, sampling weights must be applied to descriptive analysis. However, when estimating regression models, the application of weights will lead to unbiased and consistent but inefficient estimates with overly large standard errors (Winship and Radbill 1994, 230 f.). The estimation of unweighted regression models is only preferable if weighted and unweighted estimates yield statistically different results (Winship and Radbill 1994). Results based on the DuMouchel and Duncan F test show that sampling weights do not have a significant impact on the estimated results.

3.1 Dependent variable

As the focus is on the cognitive, psychological and social dimensions of well-being, we use a latent variable based on the three indicators self-efficacy, global self-esteem and social support proposed by Schulenberg et al. (2004, 2005).⁶ Self-efficacy captures the cognitive dimension, global self-esteem the psychological one, and social support the social dimension of well-being. We measure academic self-efficacy with three items based on Fend, Berger and Grob (2008).⁷ Depending on the main activity of the respondents at the time of data collection, self-efficacy is related either to work or school. Five items capture global self-esteem (Rosenberg 1965).⁸ There is little consensus in the literature on how best to measure social support (Zimet et al. 1988). For reasons of data availability, our measure is based on one functional and two structural items. The former captures respondents' perceived social acceptance among peers (Goodman 1997),⁹ the latter two the number of people they perceive as friends and peers.

3.2 Independent variables

Educational success includes four components. *Status attainment in lower-secondary education* is captured by the academic level of the completed lower-secondary school track. We distinguish between low, medium, high and very high status. *Transition to post-obligatory education* differentiates between young people who are enrolled in (or have already completed) some type of upper-secondary education at the age of 18 (1) and those who are not (0). *Educational goal attainment* in post-obligatory education distinguishes between 18-year-olds who have *achieved* and those who have *failed* their educational goal. This measurement is based on the comparison of adolescents' occupational aspirations at the age of 15 and their educational attainment three years later.¹⁰ To assess the match between educational attainment at the age of 18 and the earlier aspirations, we employed Stalder's (2005) intellectual requirement scale of vocational training. This scale captures the level of cognitive abilities necessary for the successful completion of given occupation-specific training and includes six categories. We added additional categories for adolescents in academic education and for those not enrolled in any type of formal education. Based on this extension, educational goal attainment refers to an intellectual requirement level of upper-secondary education at the age of 18 that is at least equivalent

6 $\alpha = .70$; all factor loadings are within an acceptable range $> .4$ (see Hildebrandt and Temme 2006).

7 Example: "Even if I work very hard I am not able to achieve what others are able to achieve effortlessly".

8 Example: "I feel that I have a number of good qualities".

9 "I am generally liked by my peers".

10 Educational attainment mostly refers to the upper-secondary education the respondents were enrolled in at the time of data collection. For individuals not in upper-secondary education, educational attainment either refers to the completed lower-secondary or to the already completed upper-secondary education.

to the level needed in order to fulfil the occupational aspirations set at the age of 15.¹¹ Educational goal attainment has failed if the intellectual requirement level of educational attainment at age 18 was lower than that of the upper-secondary education necessary for attaining the occupational goal set with 15.

Those who failed to achieve their educational goals were further split into three categories, based on a comparison of the intellectual requirement level of educational attainment at age 18 and the occupational aspirations at the same age. Adolescents in the first category have *upheld* their occupational goals at the age of 18 despite earlier goal failure. The second group has *adjusted* their occupational goals to the intellectual requirement level of education pursued at 18. Adolescents who have *abandoned* all occupational goals by the age of 18 are in the third category.

Our last indicator of educational success, *intergenerational status transmission*, captures adolescents whose level of education at 18 years of age was at least equivalent to their parents' highest educational attainment (1) versus all others (0).¹² To test cumulative effects of educational success, we constructed interaction terms between the four indicators of educational success. The final model includes the only significant interaction term, namely, the *interaction between goal failed but upheld and intergenerational status transmission*.

Adolescents' *socio-economic background* was measured at age 15 with an index based on parents' educational attainment, occupational status, and the household's equipment with cultural goods (Ehmke and Siegle 2005).¹³ The *relationship quality with the mother* (age 18) is measured with four items by Lüscher et al. (2000) tapping the level of emotional ambivalence towards the primary care giver and, thus, mostly towards the mother (91.2%).¹⁴ Personality characteristics were captured at 18 with the two Big 5 dimensions *extroversion* and *neuroticism*, each measured with three items (Asendorpf and van Aken 2003).¹⁵ *Well-being at age 15* is measured in the same way as the dependent variable well-being at age 18. *Sex* is coded 0 for

11 For occupational goals requiring tertiary training, we defined educational goal attainment as successful if adolescents were enrolled in a type of upper-secondary education allowing direct access to the further training/education necessary for the aspired occupation.

12 For parents with tertiary-level education, we coded status transmission as successful (1) if their sons/daughters were enrolled in an educational programme allowing direct access to equivalent tertiary-level education.

13 The index is based on a principal component analysis of the three standardised variables parental education, parental occupational status and cultural goods. The SES values correspond to the standardised loadings on the first unrotated factor. A value of 0 thus signifies an average SES level. For further information see Ehmke and Siegle (2005).

14 In adolescence, emotional ambivalence towards parents is frequent. Research has shown that there is a relationship between its intensity and individual well-being. We measure emotional ambivalence with items such as: "Thinking about your relationship with your mother/your father, how often do you feel torn in two directions in your relationship?" ($\alpha = .56$).

15 Items consisted of bipolar adjective pairs with a five-point response scale. Examples are "sociable-withdrawn" or "talkative-quiet" for extroversion ($\alpha = .78$) and "relaxed-oversensitive" or "self-assertive-vulnerable" for neuroticism ($\alpha = .59$).

girls and 1 for boys (see Table A1 in the Appendix for descriptives and correlation coefficients for all covariates).

4 Results

The vast majority of the 18-year-old respondents (96.1%) were still enrolled in some type of formal education, mostly at the upper-secondary level. At this level, 60.4% had chosen a vocational, 33.2% an academic track. The remaining young people were either employed or pursued various informal activities (e.g., language courses, practical training).

The majority of 18-year olds attained the goal they had set three years earlier: 69.3% managed to enrol in post-obligatory education characterised by an intellectual requirement level similar to (or higher than) the one necessary for attaining the occupational aspirations set at the age of 15. About 30% failed. Despite the failure, many upheld their educational goals (19.7%), still aspiring to an education similar to the one desired three years earlier. Of those who failed, 7.3% subsequently lowered their aspirations to the educational level they actually achieved at 18 years. A minority of only 3.8% failed and subsequently relinquished all educational goals.

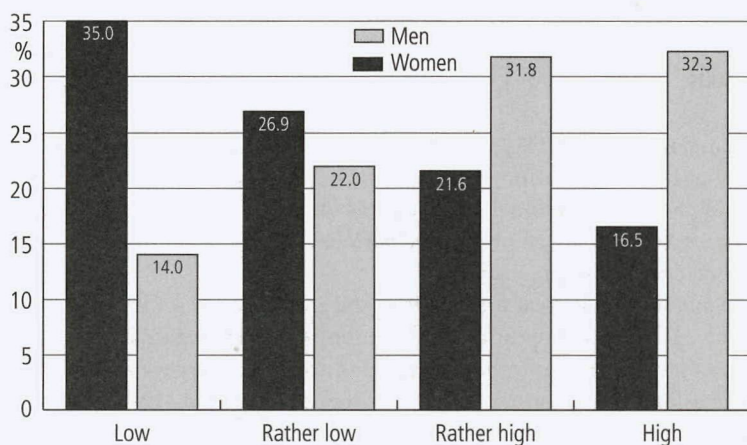
Figure 1 shows the distribution of adolescents' well-being by gender. For illustrative purposes, we divided our linear well-being indicator into four categories. As expected, young women report lower well-being than young men. More than a third falls into the lowest and about 27% in the rather low well-being category. The respective figures for young men are 14% and 22% only. By contrast, well-being of almost a third of the men is rated as rather high and another third as high. As for young women, the respective figures are 21.6% and 16.5%.

Regarding the multivariate findings, the results of the structural equation model (see Figure 2) and the multiple linear regression model (see Table 1 below) are very similar. We will thus focus on the former and refer to the linear regression findings when discussing the effects of educational goal attainment. In both models, we refrained from including well-being at age 15 due to its very high correlation with well-being at the age of 18 and an inferior fit of the structural equation model. The respective description of results will refer to the correlations displayed in Table A1 (appendix).¹⁶

Figure 2 displays the standardised path coefficients of our model. Regarding educational success, status attainment in lower-secondary education affects well-being directly and indirectly. The direct effect shows that the higher status attainment at

16 Not controlling for well-being at the age of 15 is potentially problematic. Should well-being at that age strongly affect educational success, the latter may act as a proxy for well-being at age 15. As a result, the impact of educational success on well-being at age 18 may be completely spurious. However, tests have shown that the pattern of effects of educational success on well-being at age 18 remains stable if well-being at age 15 is included into the structural equation model.

Figure 1 Well-being at age 18 by gender (N = 854)

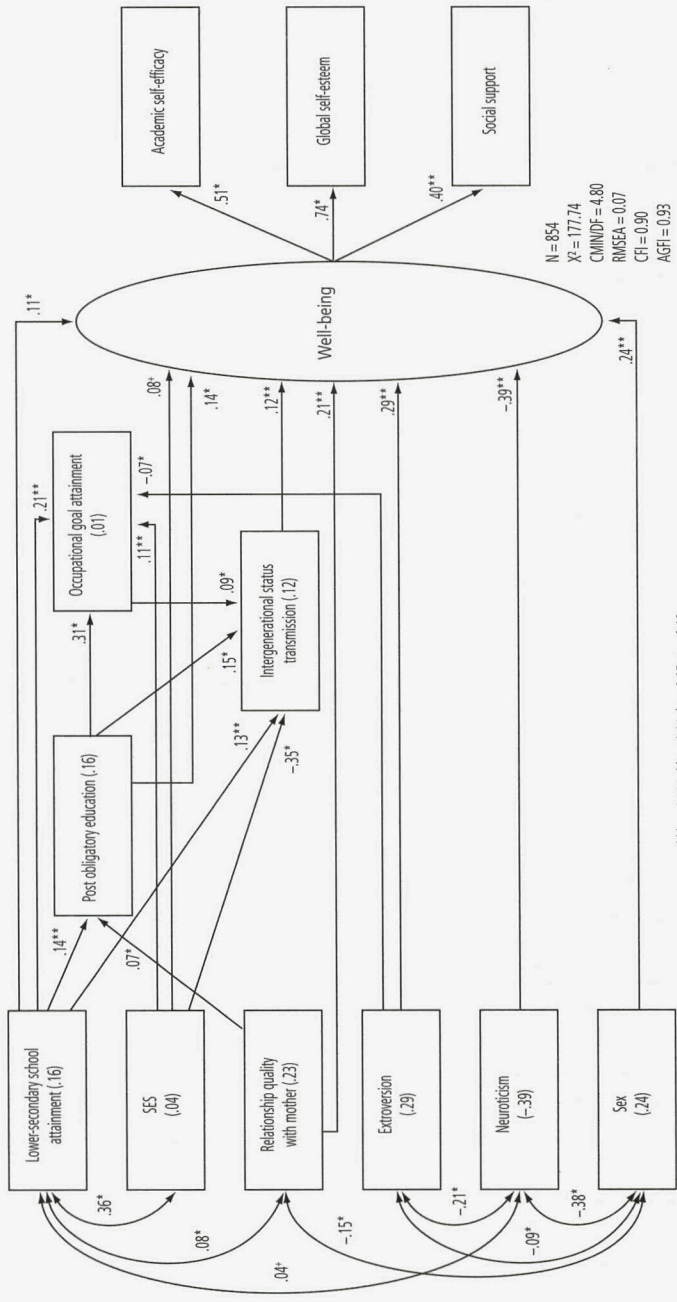


Source: Swiss Survey of Children and Youth COCON, 2006–2009.

the age of 16 or 17 is, the higher well-being at the age of 18 will be. More rigorously educated adolescents have more individual resources at their disposal to cope with stressors and negative life events, which have a potentially detrimental effect on self-esteem, life satisfaction and health, thus affecting well-being (Desjardins 2008; Hadjar et al. 2008).

The indirect effects of lower-secondary status attainment are mediated by the transition to post-obligatory education and educational goal attainment. Young people with high-status attainment in lower-secondary education are more likely to have succeeded in entering post-obligatory education and in having attained their educational goals by the age of 18 than their peers with low status attainment. In turn, entry into post-obligatory education affects individual well-being. The relationship between lower-secondary status attainment and entry into post-obligatory education bears no surprise. The status level of lower-secondary education serves as an important selection criterion for employers when choosing apprentices. High-status attainment in lower-secondary education is also indispensable for the transition to academic tracks at the upper-secondary level (Hupka-Brunner et al. 2010). As a result, young people from the lowest levels of lower-secondary schools find themselves at the back of any labour queue and access to most school-based upper-secondary education is also barred. Consequently, they often have to compromise their educational goals in order to make the transition to post-secondary education at all. Adolescents with low status attainment in lower-secondary schooling also bear the highest risk of completely failing entry into post-secondary education, resulting in

Figure 2 Determinants of adolescents' well-being at age 18 (standardised path effects; standardised total effects in brackets)



*** $p < 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; $p \leq 0.10$

Table 1
Determinants of adolescents' well-being at age 18
Multiple linear regression results (N = 854)

	Model 1			Model 2		
	b	std. b	se	b	std. b	se
Educational success						
Status attainment in lower-secondary education	0.075**	0.110	0.022	0.078***	0.115	0.022
Post-obligatory education	0.236**	0.084	0.090	0.206*	0.073	0.091
Educational goal attainment (ref. = goal attained)						
Goal failed and adjusted	-0.001	0.000	0.072	0.001	0.001	0.072
Goal failed but upheld	-0.100 ⁺	-0.061	0.054	-0.349*	-0.215	0.144
Goal failed and abandoned	-0.048	-0.015	0.093	-0.058	-0.018	0.093
Intergenerational status transmission	0.192**	0.082	0.072	0.113	0.048	0.084
Goal failed but upheld * Status transmission				0.278 ⁺	0.161	0.149
Socio-economic/emotional background, personality, gender						
SES	0.071**	0.088	0.027	0.075**	0.092	0.027
Relationship quality with mother	0.097***	0.147	0.019	0.097***	0.147	0.019
Extroversion	0.188***	0.280	0.020	0.188***	0.279	0.020
Neuroticism	-0.175***	-0.244	0.023	-0.176***	-0.245	0.023
Sex	0.291***	0.234	0.039	0.292***	0.235	0.039
Intercept	2.886***			2.987***		0.198
R ²	0.311			0.313		

⁺p ≤ 0.10 / *p ≤ 0.05 / **p ≤ 0.01 / ***p ≤ 0.001

Source: Swiss Survey of Children and Youth COCON, 2006–2009.

significantly lower well-being. This can be attributed to the fact that the completion of some type of upper-secondary schooling has become the social norm for young people in Switzerland. Complete failure not only impairs individuals' long-term life chances, but has also become a social stigma (see, e.g., Solga 2002).

Educational goal attainment does not affect young people's well-being if we simply distinguish between those who failed and those who succeeded. This is in line with our hypotheses. The failure to reach one's goals set while in lower-secondary education may lead to lower well-being at age 18 if these goals are either upheld or completely abandoned. In contrast, adolescents who do not attain their goals but adjust them subsequently to the level of their factual attainment should not show

lower well-being. By and large, the results of the multiple linear regression model shown in Table 1 support this hypothesis. The well-being of adolescents who fell short of attaining their educational goals but subsequently adjusted them to the level of their actual upper-secondary attainment does not differ significantly from those who managed to reach their goals (reference group). In contrast, young people who upheld their educational goals despite their earlier failure to attain them have lower well-being. However, the interaction effect between goals failed but upheld and intergenerational status transmission reveals the only cumulative effect of educational failure found in our data: The well-being of adolescents who did not attain their goals but still held on to them is only markedly lower if they were also incapable of maintaining their parents' educational status. In this situation, young people have not only missed their own goals but have also been unable to fulfil the educational expectations their parents held for them. This is likely to trigger feelings of personal failure and negative affect, detrimental for well-being. The finding for goal abandonment does not support action theory but is in line with the prediction from goal theory. Adolescents who failed their goals and subsequently abandoned them completely do not have lower well-being than the reference group of adolescents who reached their educational goals. We explain this by the lacking gap between aspirations and attainment.

Overall, our results show that educational success does matter for adolescents' well-being. A comparison of the total effects in Figure 2 further reveals the relative significance of the four components of educational success. Status attainment in lower-secondary education and a successful transition to post-obligatory education affect well-being equally (.16), goal attainment (i.e., goal failed but upheld) plays the smallest role (-.01) with intergenerational status attainment occupying a middle position (.12). If we compare the total effects of the four components of educational success with those of personality, gender or the relationship quality with parents, educational success seems to play only a moderate role. Given the great importance of education in adolescent life, this is rather surprising. It supports claims made in previous research, however, that personality or socio-emotional ties play a more important role in explaining well-being than education and individuals' concomitant socio-economic position (Veenhoven 2008; Diener 2009). We will now turn to these other factors and ask how well they explain well-being at the age of 18. With the exception of well-being at the age of 15, we will refer again to the results presented in the structural equation model (Figure 2).

All components of educational success are related to well-being at the age of 15 – intergenerational status attainment being the only exception (see Table A1 in the Appendix). Adolescents with high well-being at that age are found significantly more often in high-status tracks of lower-secondary school. They also succeeded more frequently in attaining their educational goals and made the transition to post-obligatory education slightly more often than their counterparts with lower

well-being. High well-being during early and middle adolescence is thus generally beneficial for educational success in lower- and upper-secondary school.

Socio-economic background has a direct and an indirect impact on well-being. Young people with an advantageous socio-economic background are more likely to attain their educational goals. The more plentiful cultural, economic and social resources provided by highstatus parents make it easier for their children to enter the aspired post-secondary education. However, these adolescents are less likely to succeed in intergenerational status transmission, which is, matching their parents' educational status. This may be due to the fact that entry into high-status post-obligatory education held by high SES parents is generally more demanding than entry into lower-status post-obligatory education. Children who aspire to these demanding types of upper-secondary education, therefore, run higher risks of failure than children who aim at less demanding educational tracks, such as school- or firm-based vocational education. Interestingly, a high socio-economic background is also weakly associated with higher well-being net of factors of educational success. This may be explained by its relationship with parenting practices. Parents with a high socio-economic status are more successful in promoting their children's agency (i. e., problem-solving capacities, assertiveness) (Lareau 2003), which in turn has a positive impact on children's well-being.

Young people who maintain a positive relationship with their mother report higher well-being than their counterparts who perceive the relationship with their mother as emotionally ambivalent. Thus, socio-emotional aspects of the family background, particularly the relationship with the primary care giver, are still of high relevance for well-being at the age of 18. Most likely, mothers are still an important source of social support beneficial for children's well-being. A positive maternal relationship also has an indirect impact on well-being by affecting the probability of having made the transition to post-obligatory education by the age of 18. In this finding, causality has to be treated with caution. It is just as likely that successful transition to post-obligatory education determines adolescents' relationship quality with their mothers positively.

Consistent with previous research, extroverted adolescents show higher well-being than more introverted ones. Those who score high on measures of neuroticism express lower well-being than their emotionally more stable peers. According to psychological temperament theories, extroverts are more sensitive to positive events and experiences, leading to positive emotions and thus to higher well-being. Neurotics, by contrast, perceive problems and negative events more strongly, resulting in negative emotions and thus in lower well-being (Lucas and Diener 2009). Alternatively, these predispositions may have an indirect effect on well-being by influencing the choice of activities, situations and events (Lucas and Diener 2009).

Gender is one of the most important predictors of well-being as was implied by the descriptive results. Young women's average well-being is significantly lower

than young men's. Gendered socialization processes are the most likely explanation. They lead to girls' lower body satisfaction (Baldwin and Hoffmann 2002; Salmela-Aro and Tynkkynen 2010), to the tendency of teachers and tutors to base feedback for girls on intellectual aspects, but that for boys on motivational aspects, which may explain girls' more dysfunctional competence beliefs and performance attribution, and to girls' lower resilience to failures in social relationships common during adolescence (Baldwin and Hoffmann 2002). In turn, these three mechanisms are likely to have a detrimental effect on the well-being of girls.

5 Conclusions

The four components of educational success, characterising the trajectory from lower-secondary to post-compulsory education in Switzerland, do indeed matter for well-being in late adolescence. Well-being at the age of 18 depends on lower-secondary status attainment and the transition to post-obligatory education. It is higher for young people from academically demanding lower-secondary tracks and for those having successfully entered post-obligatory education by age 18. The findings also confirm our assumption that well-being does not depend on absolute educational goal attainment but on how adolescents cope with goal failure. By including several components of educational success, our results shed light on the so-far unanswered question of their relative significance. Lower-secondary status attainment and the transition success to post-obligatory education are most important for well-being at the age of 18, followed by intergenerational status attainment. Educational goal attainment – although statistically relevant – plays only a minor role.

The findings particularly support the assumptions derived from resource and social comparison theory. The fairly strong effect of lower-secondary educational attainment highlights the importance of education's resource property. It indicates that more demanding tracks in lower-secondary education foster competencies which help young people cope with life's manifold demands and thus increase well-being. Favourable social comparison may contribute as well. High-status school tracks may boost young people's self-esteem and self-efficacy, as well as their well-being. Taking into account the clear-cut effects of a successful transition to post-obligatory education and intergenerational status attainment versus the weak impact of educational goal attainment, social comparison seems particularly relevant for those aspects of educational status that are clearly visible for everyone.

Despite the statistically significant results, supporting almost all of our hypotheses, educational success plays a comparatively moderate role. Gender, personality traits and socio-emotional resources affect well-being to a greater extent. Conceiving of resources broadly to also include personality traits, and taking into account the relevance of educational status attainment, we may conclude that well-being at the

age of 18 is most closely connected to resources supporting individual agency, such as the ability to cope with challenging life situations, educational demands or the tendency to experience things positively.

The fact that educational success does not play a greater role in well-being may be due to several reasons and may also point to certain limitations of this study, to be rectified in future research. First, young people may anticipate a certain degree of uncertainty and unpredictability in their post-compulsory educational trajectories and may thus exhibit a high degree of flexibility in adjusting their educational aspirations and plans. Our analyses have not been able to capture such adaption processes in detail. Second, aspects of their everyday situation at school or at work (when serving an apprenticeship), such as the degree of work autonomy, the level of (academic) demands or satisfaction with the chosen upper-secondary education, may have a far stronger impact on well-being than past events of educational success. A third reason is that the influence of educational success on well-being is likely to be less pronounced when there is still a good chance of attaining the set goals than when the window of opportunity has closed more or less permanently (see also Messersmith and Schulenberg 2010). At the age of 18, this window is still open in Switzerland and educational failures can be compensated for. However, future research needs to assess the explanatory value of these conjectures, which could not be analysed with the currently available data waves. Future longitudinal research is also needed to look at the long-term impact of different components of educational success in order to investigate whether the observed effects of educational success on adolescents' well-being may strengthen or rather weaken over the subsequent life course.

6 References

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7 Appendix

Table A1 Correlations and descriptive statistics for the observed variables (N = 854)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 Well-Being at the age of 18	1													
2 Lower-secondary school attainment	.16***	1												
3 Post-obligatory education	.13***	.14***	1											
4 Goal attained	.11**	.29***	.31***	1										
5 Goal failed and adjusted	.00	-.10**	.05	-.42***	1									
6 Goal failed, but upheld	-.11**	-.24***	-.39***	-.74***	-.14***	1								
7 Goal failed and abandoned	-.03	-.07+	-.02	-.30***	-.06+	-.10**	1							
8 Intergenerational status transmission	.08*	.04	.23***	.15***	.03	-.16***	-.08*	1						
9 SES	.11**	.37***	.01	.18***	-.06+	-.16***	-.03	-.27***	1					
10 Relationship quality with mother	.16***	.10**	.10**	.04	-.02	-.03*	.00	.05	.05	1				
11 Extroversion	.30***	-.05	-.02	-.08*	-.01	.11**	-.02	-.03	-.06+	.08*	1			
12 Neuroticism	-.38***	.08*	.04	.00	-.02	.02	-.01	-.01	.07*	-.04	-.17***	1		
13 Sex	.28***	-.00	-.06+	.02	.01	-.04	-.01	-.06	.03	-.14***	-.12**	-.39***	1	
14 Well-Being at the age of 15	.53***	.13***	.06+	.09**	-.02	-.08*	-.03	.04	.13***	.08*	.16***	-.24***	.21***	1
Mean	4.38	2.26	0.95	0.69	0.07	0.20	0.04	0.94	-0.07	3.99	4.76	2.71	0.47	4.02
Standard deviation	0.62	0.89	0.22	0.46	0.26	0.40	0.19	0.24	0.78	0.95	0.91	0.85	0.50	0.66
Scale	1-6	1-4	0/1	0/1	0/1	0/1	0/1	0/1	-2.49-1.75	1-6	1-6	1-6	0/1	1-6

+p≤0.10 / *p≤0.05 / **p≤0.01 / ***p≤0.001

Source: Swiss Survey of Children and Youth COCON, 2006-2009.

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